

BLACK HILLS NATIONAL FOREST PACTOLA RANGER DISTRICT

MAY 1990

IMPROVING BOATING ACCESS ON PACTOLA RESERVOIR

United States Department of Agriculture
Forest Service
Region 2
Black Hills National Forest
Pactola Ranger District

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Darrel Kenops - Black Hills National Forest Gina McLellan - Clemson University Bruce Laymon - Bureau of Reclamation

ABSTRACT

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TITLE:

Improving Boating Access on Pactola Reservoir

ABSTRACT:

This project deals with the impacts of consecutive years of below normal precipitation and the effects on boating recreation. When low water levels rendered the existing boat ramps inadequate on Pactola Reservoir, the recreating public called for extending the ramps while the water level was down in order to provide adequate boating access during future periods of drawdown. The recreating public was surveyed to determine where boat launch facilities should be constructed and economic analysis was used to determine where the Black Hills National Forest should spend money to improve boating access in light of varying water levels on

Pactola Reservoir.

KEYWORDS:

Boat Ramps, Boating Access, Fluctuating Water Levels, Forest Service, National Forest, Reservoir, Reservoir Management, Water Levels

EXECUTIVE SUMMARY

TITLE:

Improving Boating Access on Pactola Reservoir

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SUMMARY:

This study will provide information to help the Forest Supervisor decide how and where to improve boating access on Pactola Reservoir in light of varying reservoir levels.

Pactola Reservoir is 860 acres in size when full, is easily accessible by hard surfaced roads, and is moderately developed. Facilities include two campgrounds (88 units), three picnic grounds, two marinas with stores, two boat launches, one swimming beach, and the Forest's primary Visitor Information Center. Water levels fluctuate greatly since Pactola is used primarily to provide domestic and irrigation water to downstream users.

The boat ramps are adequate boat launching facilities while Pactola Reservoir fluctuates within 12 feet of full. However, during five of the last ten years, the water level has been down 13 or more feet during the recreation season. This means that, for almost 50 percent of the boating seasons over the last decade (1980 through 1989), recreators have had to launch their boats on the old existing roads which lead to the bottom of the reservoir, boat on other lakes, or forego boating recreation.

Boating access could be improved at Pactola Reservoir by constructing a boat launch at Custer Gulch, by widening and extending North Boat Launch, by extending South Boat Launch, and by constructing a launch facility in Boarding House Gulch.

Information was gathered by mailing letters requesting input from current and past marina slipholders at the reservoir, through television and radio interviews, and an article in The Rapid City Journal.

Analysis of the responses received indicates that boat ramp construction in Custer Gulch was a high priority with 87 percent of the respondents. Response to the proposal to widen and lengthen North Boat Launch was supported by 83 percent of the respondents. Extension of the existing South Boat Launch was supported by 73 percent of the respondents, and development of access facilities in Boarding House Gulch was supported by 63 percent of the respondents. It should be noted that support for improvements in Boarding

House Gulch were on the condition that other access points be developed first. Respondents feel that Boarding House Gulch is not needed for access at this time.

Benefit-cost analysis was conducted to reflect the economic effects of capital investments to improve boating access at Pactola Reservoir.

The economic analysis yielded a series of benefit-cost ratios in the following descending order: Custer Gulch, North Boat Launch, Boarding House Gulch, and South Boat Launch.

A simple comparison of the recreating public's priorities and the rank of the benefit-cost ratios reveals how recreation managers might deal with the problem of boating access on Pactola Reservoir during future periods of low water.

		Public's Priority for Improvements	Rank of the Benefit-Cost Ratios
	Custer Gulch	1	1
	North Boat Launch	2	2
	South Boat Launch	3	4
+	Boarding House Gulch	4	3

The evidence from the preceding chart illustrates that the public's desire to have improved boating access facilities at Custer Gulch and North Boat Launch is supported by the economic analysis. However, the public's desire for improvements at South Boat Launch and Boarding House Gulch is not consistent with the economic findings. In the case of Boarding House Gulch and South Boat Launch, improvements should be made at South Boat Launch before Boarding House Gulch. South Boat Launch is located adjacent to Pactola Campground and provides boating access for the campground users. The following questions should be answered before improvements of any kind are placed in Boarding House Gulch.

- -- Are access improvements indicated in Boarding House Gulch after the proposed improvements at Custer Gulch and North and South Boat Launches are in place? This will require further study in the future.
- -- What impact will boating access facilities in Boarding House Gulch have on the quality of recreation and on terrestrial wildlife in that area?

In conclusion, it is the public's desire to enjoy boating and adequate boat access facilities on Pactola Reservoir when the reservoir is full as well as at reduced water levels. Improvements to facilities should begin as soon as possible, while the water level is low. Improvements should take place in the following locations and priority: Custer Gulch, North Boat Launch, and South Boat Launch. No improvement should be placed in Boarding House Gulch until further study is completed to determine need and the impacts on the quality of recreation and on terrestrial wildlife. These conclusions are supported by economic analysis as each site shows a positive present net value and a benefit-cost ratio greater than one.

* Developments not recommended without further study



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CHAPTER I

INTRODUCTION

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I. INTRODUCTION

There are no natural lakes in the Black Hills or surrounding plains. All but five of the man-made lakes and reservoirs are less than 50 acres in size and only two of these are within an hour's drive of Rapid City, the area's major population center. These two are Pactola Reservoir and Sheridan Lake, both of which are about 15 miles, or one-half hour by road from Rapid City (refer to Vicinity Map A).

The scarcity of large water bodies and the close proximity of Pactola Reservoir and Sheridan Lake to Rapid City (metropolitan area population 70,000+) creates heavy boating use pressure. Compounding these factors are two others: The nearness of Mount Rushmore National Memorial, which attracts over two million visitors each year, and the beautiful scenery found in the Black Hills. Only slightly more than half of the recreationists who use the lakes are residents of the local area, which includes six counties in South Dakota and Wyoming.

A. Setting and Conditions

Pactola Reservoir was created in 1956 when the Bureau of Reclamation finished work on a dam on Rapid Creek west of Rapid City. This lake was named for a now submerged gold mining town which in turn took its name from "pactolus", a Persian word meaning "gold bearing sands".

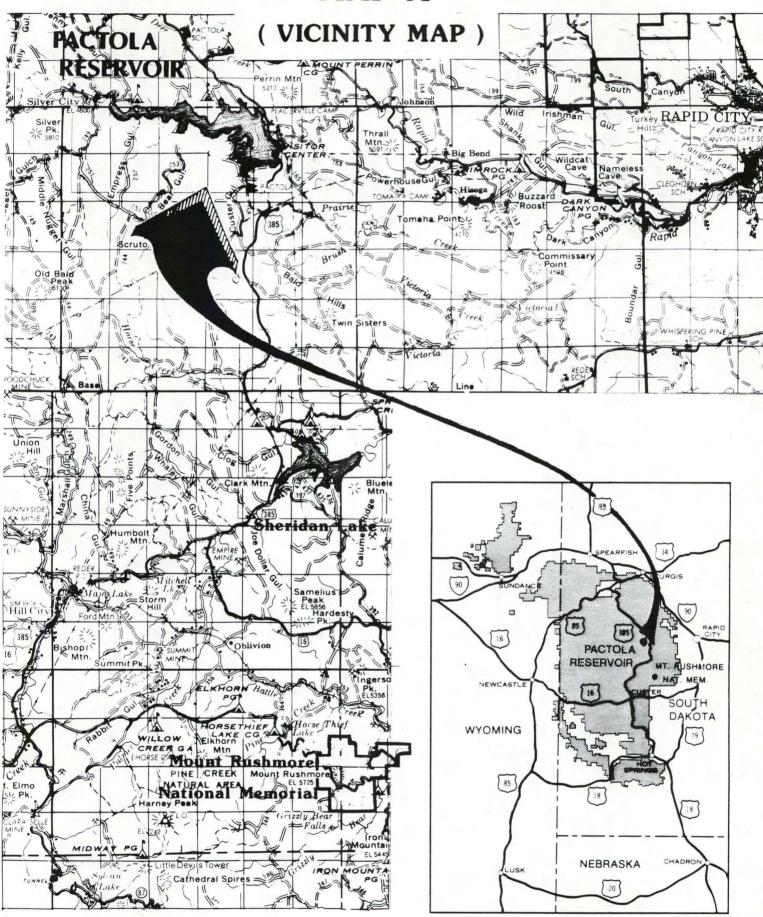
Pactola is surrounded by rugged, mountainous terrain. Talus slopes, rock outcrops, and cliff faces are visible through a heavy forest cover consisting of ponderosa pine interspersed with stands of aspen and birch.

Pactola Reservoir is 860 acres in size when full, is easily accessible by hard surfaced roads, and is moderately developed. Facilities include two campgrounds (88 units), three picnic grounds, two marinas with stores, two boat launches, one swimming beach, and the Forest's primary Visitor Information Center. Water levels fluctuate greatly since Pactola is used primarily to provide domestic and irrigation water to downstream users.

The boat ramps are adequate boat launching facilities while Pactola Reservoir fluctuates within 12 feet of full. However, during five of the last ten years, the water level has been down 13 or more feet during the recreation season (refer to Appendix A). This means that, for almost 50 percent of the boating seasons over the last decade (1980 thru 1989), recreators have had to launch their boats on the old existing roads which lead to the bottom of the reservoir, boat on other lakes, or forego boating recreation.

1/ "Management of the Conflicting Recreational Water Uses at Sheridan Lake and Pactola Reservoir" by David W. Jensen, March 1987.

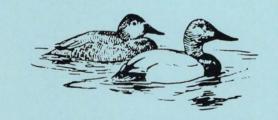
MAP A



B. Boating Access in Relation to Population Growth. Because of the limited opportunities for recreational boating, the lakes in the Black Hills receive very heavy use. Boat traffic on Pactola is considered extremely heavy between Memorial Day and Labor Day, especially on weekends and holidays. The campgrounds and other developed recreational facilities, which are located around the lake, make Pactola a destination recreation experience.

Water recreation use increased over 20 percent in the past ten years. Proportionately, the population in the local area has increased by 31 percent since 1970. Rapid City alone has grown by almost 12,000 people since 1970 (refer to Appendix B). Visitation at Mount Rushmore has increased by 10 percent since 1972 to almost 2.1 million persons per year. With population increases in the local area and increased tourism, the demand for recreational boating has increased. At the same time, boating access at Pactola Reservoir is nearly eliminated by lack of adequate ramp facilities in five out of the last ten years. When boating access to Pactola is curtailed by inadequate launching facilities, boating pressure on other lakes increases and use of recreation facilities at Pactola Reservoir decreases.





CHAPTER II

PURPOSE OF STUDY

CHAPTER II

II. PURPOSE OF STUDY

This study will provide information to the Forest Supervisor and the boating public who use Pactola Reservoir for recreation. It will help the Forest Supervisor decide how and where to improve boating access on Pactola Reservoir in light of varying reservoir levels.

The Forest Service manages recreational use on Pactola Reservoir and the access to the reservoir. The Bureau of Reclamation manages the water rights which are owned by downstream users who, therefore, control the outflow from the dam.

Pactola Reservoir, built in the early 1950's, has become an intensely used recreation site. Uses consist of boating, water skiing, wind sailing, jet skiing, swimming, fishing, and scuba diving. The reservoir is 860 surface acres when full and has two marinas with boat storage and two boat launches. Water rights at the reservoir are owned by downstream irrigators and the City of Rapid City, South Dakota, for agricultural irrigation and domestic water use. The Black Hills and western South Dakota have suffered from extended drought in four of the last five years, and the exercise of water rights by their rightful owners has drawn down the reservoir approximately 45 feet. Both existing boat ramps are currently out of the water and have been since July of 1988. As a matter of fact, over the last ten years (1980 through 1989), the access ramps have been inadequate due to low water levels during the 1980, 1981, 1985, 1988, and 1989 recreation seasons (Appendix A).

Current access for boats is by use of an old highway that runs to the bottom of the reservoir. The highway is narrow, poorly surfaced, curved and does not have adequate grade to accommodate boat launchings.

The <u>Black Hills National Forest Land and Resource Management Plan</u> which sets direction for the Pactola Ranger District, of which Pactola Reservoir is a part, gives clear, definitive objectives for management of the recreation opportunity at the reservoir. On Page III-88 of the Management Plan, it directs the Forest Service to: provide developed recreation opportunities with a high level of user comfort and convenience at intensively developed sites such as picnic grounds, campgrounds, swimming beaches, <u>boat launches</u>, overlooks, and visitor information centers.

Numerous contacts from the recreating public have called for extending the boat ramps now while the water is down. Everyone agrees that when Pactola is full again, it will continue to be subject to drawdown as the demand for water increases with expanding population, increased tourism, and future periods of drought. Therefore, future drawdowns will have less impact on water-based recreation if improvements are made now.

The objectives of this study are to:

- (1) Ask current marina customers and the general boating public to determine where boating access should be improved on Pactola Reservoir.
- (2) Determine where the Forest Service should improve boating access on Pactola Reservoir from a cost-benefit standpoint.



CHAPTER III

LITERATURE REVIEW

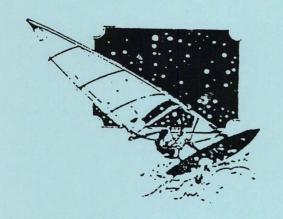
CHAPTER III

III. LITERATURE REVIEW

Early in the process of project planning, I began a search of the available literature which would support or give foundation to my study. While on campus at Clemson University, I spent several hours in the library and was unable to locate anything of substantive value relating to the topic.

I queried FS INFO (WESTFORNET) using the following keywords: Boating access, fluctuating water levels, boat ramps, reservoir management, and received a substantial list of documents. After reviewing the document list, only three documents appeared to be related, and I acquired them from the appropriate library. Upon review of these documents, I found they were indeed related to the keywords but not to the boating access problem at Pactola Reservoir.

In February 1990, I went to the library at the South Dakota School of Mines and Technology which is located in Rapid City, South Dakota. Again, I was unable to locate any documents relating to boating access on lakes with fluctuating water levels. From this experience, I concluded that the relatively simple solution to the problem is extending existing boat ramps to provide boating access to lakes or reservoirs during periods of low water. The difficult questions are to determine where to improve boating access and where to make investments in light of economic efficiencies.



CHAPTER IV

CONSTRUCTION

CHAPTER IV

IV. CONSTRUCTION

Pactola Reservoir has few access points due to the rugged forested terrain which surrounds it. In August of 1989, members of my staff and I boated around Pactola Reservoir to evaluate locations and alternatives to improve recreational boating access. We determined that access could be improved in four areas.

Access could be improved at Custer Gulch by dredging the existing marina and using the dredged material to construct a boat ramp on the site of the old highway in Custer Gulch (Map B). This new ramp would be functional when the existing South Boat Launch was inadequate because of low water. It would provide for boat launching in the future when the reservoir was drawn down from 12 feet to 40 feet below normal. Improvements would include expanding the existing parking at Custer Gulch.

North Boat Launch could be widened and extended approximately 300 feet to provide boat access when the reservoir is 40 feet below normal. At North Boat Launch, additional parking facilities and additional docks for boat launching would be needed to fully utilize the expanded boat launch (see Map B).

Boarding House Gulch is currently not being utilized for boat access or marina services on Pactola Reservoir. Boarding House Gulch, which is immediately west of North Boat Launch, could be utilized to provide marina services which are currently being provided at North Boat Launch. This would provide for additional public safety and reduced user congestion (see Map B).

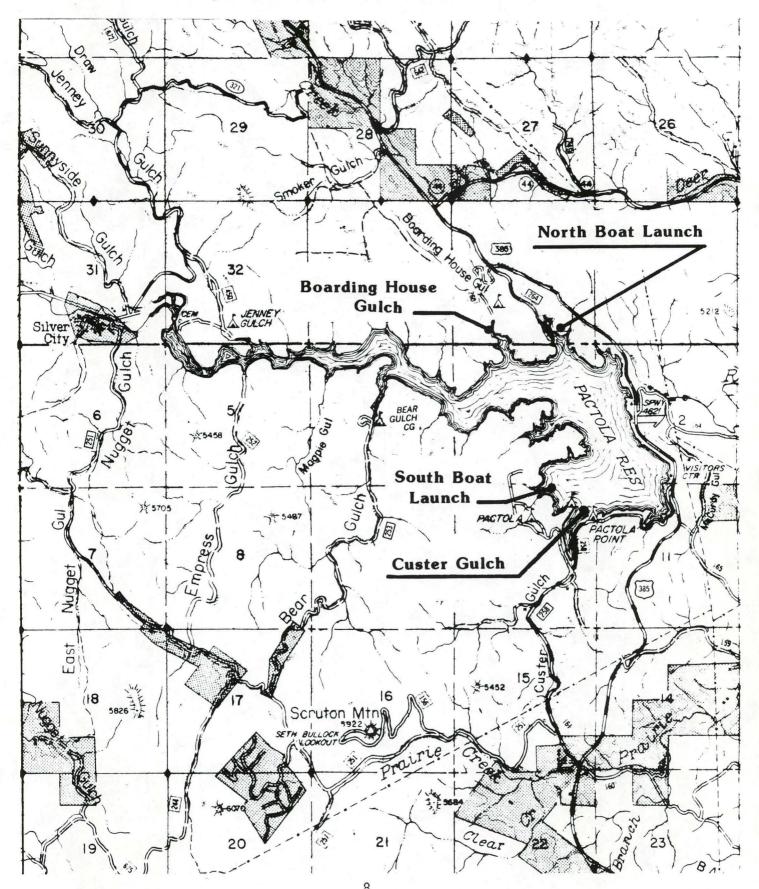
Improvements would include upgrading the entrance road, constructing parking facilities and dredging the channel to provide boat storage when the reservoir is 40 feet below normal. Boarding House Gulch could also be utilized for boating access with the construction of a ramp instead of a marina facility. Boarding House Gulch is too narrow to accommodate both a marina and a ramp facility.

The current South Boat Launch adjacent to Pactola Campground could also be lengthened approximately 200 feet at the current slope of 12 percent. The reservoir bottom would then be dredged 40 feet below the normal water level. This would provide a channel to the boat ramp and provide greater user benefit (see Map B).

With the current low water level, dredging and ramp construction could be accomplished with land-based equipment.

There are three additional access opportunities on Pactola Reservoir. Jenny Gulch is available for access when the reservoir is full. Now that the reservoir is down 45 feet below normal, it is more than one-half mile

MAP B
(PACTOLA RESERVOIR)



from water. When Pactola is five feet below normal water level, Jenny Gulch is no longer available for boat access. Bear Gulch and Empress Gulch also access Pactola Reservoir. They are remote and are served by low standard roads which are not adequate for towing a boat and trailer. Jenny, Bear, and Empress Gulches will receive no further consideration because of the aforementioned conditions.

With the results of the field trip and interaction with my staff and the formal part of the Clemson short course behind me, my thoughts turned to how I would make an objective recommendation to the Forest Supervisor on how to improve boating access at Pactola Reservoir. I decided to write a letter to each of the current slipholders at Pactola Reservoir and to those who rented slips previously from the marina permittee during the last five years. I also put an article in The Rapid City Journal, which serves as the regional newspaper, and arranged for television interviews with two local commercial television stations, KOTA and KEVN. Several local radio stations also carried the interviews. I incorporated methods I learned from Ben Box on working with the media and contacting the user public early in the planning process to develop public support for the project. The letter I wrote to the slipholders (Appendix C) was written with points from Claire Caskey on simplicity, clarity, and brevity.



CHAPTER V

METHODOLOGY

CHAPTER V

V. METHODOLOGY

Information was gathered by mailing 172 letters requesting input from current and past marina slipholders at the reservoir, through television and radio interviews, and an article in The Rapid City Journal. Letters were sent October 20, 1989. The following week media attention focused on the proposals through a newspaper article and television and radio interviews. Response was considered light as only 30 responses were received. A possible reason for the low response might be that by October the boating season is over. People tend to forget about their water-related recreation inconveniences when other recreational activities such as hunting and indoor sports are available.

Analysis of the responses received indicates that boat ramp construction in Custer Gulch, to provide for boat launching during future periods of reservoir drawdown, was a high priority with 87 percent of the respondents in favor of construction while the water level is down. Those respondents also favored expanding parking at the Custer Gulch Marina to facilitate the increased use of the area for boat launching during periods of low water. Response to the proposal to widen and lengthen North Boat Launch, expand the parking, and provide additional docks was supported by 83 percent of the respondents. Extension of the existing South Boat Launch, which requires a substantial amount of dredging, was supported by 73 percent of the respondents.

Development of access facilities in Boarding House Gulch received the lowest public support with only 63 percent of the respondents in favor. It should be noted that support for improvements in Boarding House Gulch were on the condition that other access points be developed first. Respondents feel that Boarding House Gulch is not needed for access at this time.

Only one respondent was opposed to making investments in boat launching facilities at Pactola, indicating that it would be better to construct another reservoir downstream from Pactola and thereby make another body of water available for irrigation, flood control, and recreation. The idea is not receiving further consideration in this project because the proposed site is under the jurisdiction of other agencies.

All respondents, in favor of improved boat launching facilities at Pactola, support beginning the project as soon as possible while water levels are low and work can be completed with conventional land-based construction equipment. The added advantage to construction, while the water level is low, is to protect water quality and reduced interruption of recreation activities. It should be remembered that future reservoir level fluctuations are anticipated due to the history of drought periods and irrigation and domestic water uses by downstream users.

Benefit-cost analysis was conducted to reflect the economic effects of capital investments to improve boating access at Pactola Reservoir. The benefit-cost analysis compares the present value of benefits to the present value of costs in terms of dollars for the access improvements being considered for Custer Gulch, North Boat Launch, South Boat Launch and Boarding House Gulch. The net present value criteria is used to express the results of this analysis and to show the relative attractiveness of investment opportunities in terms of economic efficiency.

The basic components of the benefit-cost analysis are defined below:

<u>Time Frame</u>: The analysis period used was 20 years, the expected life of the improvements.

<u>Discount Rate</u>: A 4 percent real discount rate was used in the analysis. Discounting is a process whereby the dollar values of costs and benefits which occur at different time periods are adjusted to a common time period so that they can be compared. The common time period in this analysis is the present, and the discounted value is referred to as the present value.

Base Year: All values were in 1989 dollars.

<u>Values</u>: Benefit values used were those published in the 1985 Forest Service Resources Planning Act Program.

<u>Costs</u>: Only those costs which were expected to vary by project alternative were included in the benefit-cost analysis. This is because the objective of the analysis is to display the differences among alternatives. Costs which remain the same across all alternatives (e.g., general administration expenses) do not affect the differences and, therefore, are excluded.

Cost Data: Costs used in this analysis were the engineer's estimated project costs. These would include road construction, channel dredging, boat launch construction, parking reconstruction and construction, erosion control, soil stabilization, signing, engineering and project administration costs. Because these costs vary by individual project conditions, costs were estimated site specifically.

The benefit-cost analysis identified benefits to the recreation, wildlife, and fish resources. These benefits varied by alternative for recreation but not so with wildlife and fish, with the exception of Boarding House Gulch where there are currently no improvements.

In the analysis, all identified costs and benefits were estimated over the 20-year period and discounted to the present. The net present value is calculated by subtracting the present value of costs from the present value of the benefits. An incremental net present value is calculated by comparing each alternative with the existing situation. The existing situation represents what I expect will occur if the current access facilities are not upgraded in the future. It provides a benchmark then,

against which to measure other courses of action, as expressed in the four alternatives. A positive incremental net present value for an alternative indicates that it is an improvement, in terms of economic efficiency over the existing situation. A negative incremental net present value indicates that a particular alternative is less attractive economically than the existing situation.

The following table displays the benefit-cost analysis and the present value of benefits and costs in thousands of dollars:

	Existing Situation	Custer Gulch	North Boat Launch	South Boat Launch	Boarding House Gulch
BENEFITS		No.			
Recreation	12,892	48,384	10,827	1,353	2,635
Wildlife & Fish	7,247	160	160	160	2,213
Total: Present Value Benefits	20,139	48,548	10,991	1,514	4,848
1/ Incremental Benefits	,	28,409	-9,148	-18,625	-15,291
COSTS		PR 17			
Operation & Mtnc.	4	4	4	67	131
Capital Investment-Roads		250			130
Capital Investment-Other		777	1,076	728	844
Total: Present Value Costs	4	1,031	1,080	795	1,105
1/ Incremental Costs		1,027	1,076	791	1,101
2/ Net Present Value	20,135	47,517	9,911	719	3,743
1/ Incremental Net Present Value		27,382	-10,224	-19,416	-16,392
Benefit-Cost Ratio	5035	47.26	10.21	1.9	4.39
Rank of B-C Ratio		1	2	4	3

Incremental Benefits = Change in benefits (+ or -) of that alternative when compared with the "Existing Situation" alternative. Incremental Costs and Incremental Net Present Value are calculated in the same manner.

Following is some interpretation of the results shown on the above table. The Custer Gulch alternative produces a positive incremental net present value. This means that it produces an improvement in terms of economic efficiency over the existing situation. All other alternatives produce negative incremental net present values with North Boat Launch showing the least decline and Boarding House Gulch and South Boat Launch showing increasing negative incremental net present values. In terms of economic

^{2/} Net Present Value = Present Value Benefits minus Present Value Costs

efficiency, then, improvements at Custer Gulch are the most attractive and those at Boarding House Gulch and South Boat Launch are the least attractive. Consideration of the activities in each alternative provides some explanation as to why the benefit-cost analysis produced these results. For example, benefits at Custer Gulch increase over the existing situation while they decline at the other alternative sites. The reason for this is that the material needed to construct the boat launch at Custer Gulch will be dredged from the present marina storage area resulting in improved marina boat storage during future periods of low water. Therefore, at Custer Gulch, the recreator gets a two-for-one effect with improved boat launching and marina boat storage facilities during times of low water, something no other alternative offers. While the value of benefits varies substantially across the alternatives, the value of costs are quite similar yielding a series of benefit-cost ratios in the following descending order: Custer Gulch, North Boat Launch, Boarding House Gulch, and South Boat Launch.



CHAPTER VI

DISCUSSION AND SUMMARY

CHAPTER VI

VI. DISCUSSION/SUMMARY

The information gathered from the boating public in the fall and early winter of 1989 regarding access improvements on Pactola Reservoir for periods of low water has provided recreation managers with important insights. The greatest number of respondents favor constructing a boat launch at Custer Gulch and dredging the Custer Gulch marina along with expanding parking facilities to improve services to the occasional boater as well as the slipholder. Extension and widening of the launch facility at North Boat Launch along with increased parking facilities also received high favor from the boating public who use Pactola Reservoir. Dredging and ramp construction of the South Boat Launch was supported by three out of four respondents and three out of five respondents supported construction of a boat ramp, parking, and access road in Boarding House Gulch even though Boarding House is currently undeveloped and restricted from vehicular access.

I believe this high level of support by the respondents illustrates the need for improvements which provide for boating access during periods of reduced water levels. These same individuals support rapid action to construct improvements while the water levels are down. It should be noted that facility improvements, while the water levels are low, allow for the use of land-based earth moving equipment. This will reduce water quality degradation during the construction period and reduce interruption of recreation activities. Future low water conditions at Pactola Reservoir are anticipated as illustrated in five of the last ten years. When water levels fluctuate 12 or more feet, the existing boat launch facilities are inadequate and recreators are forced to launch their boats on the old existing road which leads to the bottom of the reservoir at substantial risk to their recreational equipment.

A number of the recreating public questioned the wisdom of constructing boating facilities in Boarding House Gulch. These people use Boarding House Gulch as a protective cove where boaters can find protection from storms, a quiet place to spend the night on their boats, or a peaceful place among the speedboats and water skiers. Other respondents who favor improvements on Pactola Reservoir feel that improvements in Boarding House Gulch are the lowest priority. They feel that improvements in Boarding House Gulch should be made only after the improvements in Custer Gulch and North and South Boat Launches are accomplished and a need for additional facilities is still indicated.

It may be that Boarding House Gulch in its present condition provides a place on Pactola Reservoir for the enjoyment of peace and tranquility, a place to dream and reminisce during periods of heavy recreation activity. This is an important beneficial use of National Forest resources which may well be lost if Boarding House Gulch is developed.

Also, the District wildlife biologist feels that opening up Boarding House Gulch to recreational traffic could cause substantial impacts on terrestrial wildlife. Additional study is recommended before a decision to construct boating access facilities in Boarding House Gulch is considered.

The benefit-cost ratio for the Custer Gulch alternative is 47.26:1, meaning that the value of benefits to be achieved are more than 47 times greater than the cost of the proposed constructed facilities. By comparison, the benefit-cost ratio for North Boat Launch is 10.21:1, Boarding House Gulch is 4.39:1, and South Boat Launch is 1.9:1. The differences among the four sites being studied are not so much in the estimated costs, for they are quite similar across the alternatives, but vary greatly in the value of the benefits to be realized. The Custer Gulch alternative provides increased benefits of boat launching as well as greatly improved marina boat storage capacity during future periods of low water. Benefits are accrued at North Boat Launch, Boarding House Gulch, and South Boat Launch primarily from vastly improved boat launching facilities during future periods of low water levels.

A simple comparison of the recreating public's priorities and the rank of the benefit-cost ratios reveals how recreation managers might deal with the problem of boating access on Pactola Reservoir during future periods of low water.

	Public's Priority for Improvements	Rank of the Benefit-Cost Ratios
Custer Gulch	1	1
North Boat Launch	2	2
South Boat Launch	3	4
Boarding House Gulch	4	3

The evidence from the preceeding chart illustrates that the public's desire to have improved boating access facilities at Custer Gulch and North Boat Launch is supported by the economic analysis. In short, what the public wants in the way of improved facilities at these sites makes efficient use of economic resources. However, the public's desire for improvements at South Boat Launch and Boarding House Gulch are not consistent with the economic findings or vice versa. This is mostly due to the inability of the economic study to deal with the values people put on a quiet cove where boaters find peace and refuge from the hustle and bustle of boating activities on an active day or shelter from high winds in the event of a fast approaching storm. In the case of Boarding House Gulch and South Boat Launch, I believe that improvements should be made at South Boat Launch before Boarding House Gulch. South Boat Launch is located adjacent to Pactola Campground and provides boating access for the campground users. I also feel the following questions should be answered before improvements of any kind are placed in Boarding House Gulch.

^{*} Developments not recommended without further study

- -- Are access improvements indicated in Boarding House Gulch after the proposed improvements at Custer Gulch and North and South Boat Launches are in place? This will require further study in the future.
- -- What are the benefits of the quiet cove of Boarding House Gulch to the boating public and how would they change if facilities were constructed in Boarding House Gulch?
- -- How significant will the impacts on terrestrial wildlife in the Boarding House Gulch area be with the development of boating access there?

In summary, I conclude that it is the public's desire to enjoy boating and adequate boat access facilities on Pactola Reservoir when the reservoir is full as well as at reduced water levels. The demand for boating recreation is increasing with the continued upswing in the local economy and increasing local population levels. Also it is important to note that the South Dakota National Guard spends thousands of personnel and equipment hours training on the Black Hills National Forest each year. The facility improvements described in this document, which will improve boating access on Pactola Reservoir, will make ideal training projects for National Guard units at very little cost to the Black Hills National Forest or the recreating public. Improvements to facilities should begin as soon as possible, while the water level is low. The priority for improvements should take place in the following locations and order: Custer Gulch, North Boat Launch, and South Boat Launch. No improvements should be placed in Boarding House Gulch until further study is completed to determine need and the impacts on the quality of recreation and on terrestrial wildlife. These conclusions are supported by economic analysis as each site shows a positive present net value and a benefit-cost ratio of greater than one.



CHAPTER VII

APPENDICES



APPENDIX A

Pactola Reservoir Water Levels

RES070 V2.5C 05-Oct-89

PACTOLA RESERVOIR WATER LEVELS BY MONTH AND YEAR (INFORMATION PROVIDED BY THE BUREAU OF RECLAMATION)

Run 11-BEC-89 08:35:43

Station PTR Pactola Reservoir, Rapid Creek near Rapid City, SD Parameter FB.EOM Reservoir End-Of-Month Forebay Elevation (feet)

					,	*****											
Year	Oct	Nov	Dec	Jan	Feb	Жэг	Apr	Жэу	Jun	Jul	Aug	Sep	Hean	Жах	Date	Min	Date
1957 1958 1959 1960 1961 1963 1964 1964 1967 1969 1971 1977 1977 1977 1977 1977	4451.92 4505.42 4505.42 4520.37 4531.58 4515.97 4475.08 4578.23 4578.23 4578.33 4578.33 4578.33 4578.69 4577.55 4574.69 4574.69 4574.69 4574.70 4562.19 4577.27 4571.32 4579.19 4579.19 4579.19 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63 4579.63	4456.66 4507.08 4520.51 4532.01 4514.89 4474.87 4535.98 4578.51 4578.43 4579.20 4577.97 4576.23 4574.72 4564.60 4572.02 4577.20 4571.55 4578.83 4570.25 4578.83 4570.25 4578.83 4570.25 4578.38 4579.51 4564.85 4578.38 4579.51	4458.44 4508.24 4521.11 4532.44 4515.06 4474.63 4536.77 4578.87 4579.04 4577.97 4578.32 4577.90 4574.25 4575.52 4577.94 4575.52 4577.94 4574.85 4564.19 4578.11 4578.11 4578.11 4578.11 4578.11 4578.11 4578.11 4579.78 4579.78 4577.83 4577.83 4577.83 4577.83 4573.43 4573.43 4573.43 4552.77	4458.36 4509.06 4521.44 4532.88 4515.31 4474.68 4537.59 4578.78 4579.08 4578.38 4577.86 4577.97 4575.42 4575.05 4564.08 4577.45 4577.45 4577.45 4577.45 4577.45 4577.45 4578.27 4577.45 4578.27 4577.45 4578.31 4578.31 4578.31 4578.31 4578.31 4578.36 4579.67 4579.30	4459.44 4510.38 4522.10 4533.45 4515.56 4476.58 4538.90 4579.07 4579.20 4578.69 4578.69 4578.69 4576.45 4576.45 4575.24 4575.24 4575.24 4575.27 4577.90 4577.44 4577.90 4577.44 4577.90 4577.44 4579.63 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82 4578.82	4464.47 4512.30 4523.67 4535.99 4516.64 4478.46 4542.92 4579.16 4579.24 4579.36 4579.36 4577.36 4577.36 4577.10 4576.28 4576.24 4563.42 4578.46 4578.58 4578.58 4578.59 4578.59 4578.59 4579.41 4568.38 4579.42 4579.42 4579.42 4573.91 4561.40	4472.00 4516.10 4526.54 4537.17 4514.77 4480.20 4550.07 4579.57 4579.98 4579.98 4579.98 4577.96 4579.97 4579.97 4579.97 4579.97 4579.97 4579.97 4579.99 4579.99 4579.99 4579.99 4579.99 4579.99 4579.99 4579.99 4567.72 4579.99 4567.72 4579.99 4567.72 4579.91 4567.72 4579.91	4483.60 4517.62 4527.05 4535.03 4510.33 4489.40 4559.62 4579.46 4585.21 4579.10 4579.85 4579.34 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.38 4579.39 4578.61 4578.70 4569.20 4574.69 4577.35 4577.35 4577.35 4579.91 4574.69 4574.69 4574.69 4574.69	4499.15 4520.28 4527.91 4533.53 4498.57 4520.08 4580.11 4579.77 4579.76 4577.44 4582.05 4577.44 4582.05 4577.40 4579.25 4579.25 4578.31 4578.31 4578.61 4578.31 4578.61 4578.31 4578.61 4578.91 4581.16 4578.14 4588.34 4581.50 4580.41 4581.16 4572.44 4578.91 4579.29 4569.54 4547.93	4504.92 4521.12 4527.48 4527.49 4529.75 4579.49 4578.79 4579.57 4578.38 4576.67 4577.02 4577.02 4577.25 4577.02 4577.34 4579.10 4572.41 4579.56 4568.73 4572.86 4564.37 4580.28 4577.90 4580.28 4577.90 4580.28 4577.90 4580.28 4577.90	4506.12 4521.30 4527.04 4520.45 4480.63 4531.85 4578.48 4577.65 4578.74 4578.74 4578.74 4573.53 4565.04 4577.13 4577.13 4577.13 4577.13 4577.13 4577.13 4577.13 4577.13 4577.13 4577.13 4577.11 4579.31 4577.13 4577.13 4577.13 4578.54 4577.13 4579.31 4577.13 4579.31 4577.13 4577.13 4577.13 4577.13 4577.13 4578.54 4577.13 4579.31 4579.31 4579.31 4579.31 4579.31 4579.31 4579.31	4504.47 4520.64 4531.14 4531.598 4475.87 4578.66 4578.70 4578.66 4577.81 4574.31 4574.37 4574.35 4574.35 4576.86 4573.54 4573.54 4573.54 4573.54 4578.70	4476.63 4514.13 4524.70 4530.62 4505.03 4494.86 4554.46 4578.85 4579.80 4579.99 4578.57 4579.54 4576.22 4573.14 4569.91 4576.43 4568.40 4569.91 4579.24 4579.30 4574.56 4571.41 4577.54 4569.33 4548.68	4506.15 4521.56 4531.14 4537.36 4516.71 4532.66 4580.14 4581.30 4585.87 4580.36 4584.50 4579.60 4579.60 4579.60 4579.60 4579.60 4579.61 4581.06 4579.64 4581.03 4581.06 4579.64 4581.03 4581.06	AUG07 SEP30 APR25 APR03 SEP30 SEP30 JUN15 JUN15 JUN21 APR30 HAY04 JUN05 HAY01 JUN02 JUN02 JUN02 JUN02 JUN02 JUN02 JUN02 JUN02 JUN03 HAY08 HAY08 HAY08 HAY08 HAY08 HAY08 HAY08 HAY08 JUN19 JUN19	4449.84 4504.46 4520.27 4515.98 4474.60 4532.72 4577.23 4578.32 4576.31 4574.21 4573.57 4574.46 4573.51 4563.70 4570.67 4570.67 4563.70 4576.71 4563.26 4563.27 4573.30 4576.71	OCTO1 OCT23 SEP30 SEP30 DEC24 OCT01 AUG20 AUG11 OCT01 SEP10 SEP29 JAN09 SEP04 DCT01 SEP16 SEP30 DCT01 SEP16 SEP30 DCT01 SEP27 OCT01 DCT01 SEP27 OCT01 OCT01 SEP27 OCT01 SEP28 SEP30 DCT01 SEP30 DCT02 SEP14 SEP30 DCT01 SEP28 SEP30
in. XEK	4451.92 4580.13	4456.66 4580.25	4458.44 4579.78	4458.36 4579.30	4459.44	4464.47 4579.69	4472.00 4580.02	4483.60 4585.21	456 6. 09 449 8.57 458 4.4 6	4563.85 4486.80 4580.95	4480.63 4580.15	4475.87 4580.39	4476.63 4579.80	4506.15 4585.87		4449.84 4578.32	

Reservoir Conservation Pool Level is 4580



APPENDIX B

Population Statistics

POPULATION STATISTICS *

	ACT	TUAL	% CHANGE	ESTI	ESTIMATED		
CITY/COUNTY	1970	1980	1970 - 1980	1988	1980-88 %CHANGE		
ELLSWORTH AFB	5,805	6,432	+ 10.8	7,637	+ 0.19		
HOT SPRINGS	4,434	4,742	+ 6.0	4,560	- 3.80		
EDGEMONT	1,174	1,468	+ 25.9	1,080	- 26.2		
FALL RIVER COUNTY	7,505	8,439	+ 12.4	7,600	- 9.7		
CUSTER CITY	1,597	1,830	+ 14.0	1,840	+ 0.5		
CUSTER COUNTY	4,698	6,000	+ 27.0	6,800	+ 13.7		
RAPID CITY	43,836	48,692	+ 11.0	55,780	+ 14.5		
BOX ELDER	607	3,186	+ 424.8	5,140	+ 61.4		
PENNINGTON COUNTY	59,349	70,361	+ 18.5	82,000	+ 16.6		
STURGIS	4,536	5,184	+ 14.2	5,270	+ 1.7		
MEADE COUNTY	16,618	20,717	+ 25.0	23,700	+ 14.5		
DEADWOOD	2,409	2,035	- 15.0	2,050	+ 0.7		
LEAD	5,420	4,330	- 20.0	3,810	- 12.1		
SPEARFISH	4,661	5,251	+ 12.6	6,170	+ 17.5		
LAWRENCE COUNTY	17,453	18,339	+ 5.0	19,700	+ 7.4		
BELLE FOURCHE	4,236	4,692	+ 11.5	4,490	- 4.4		
BUTTE COUNTY	7,825	8,372	+ 7.0	8,200	- 1.8		

^{*} SOURCE: State Data Center, University of South Dakota



APPENDIX C

Letter to Slipholders and News Release

United States
Department of
Agriculture

Forest Service Black Hills National Forest Pactola Ranger District 803 Soo San Drive Rapid City, SD 57702

Reply To: 2330

Date: October 20, 1989

Dear

The Pactola Ranger District, Black Hills National Forest, is requesting comments on the proposed land-based dredging operation and public access proposals for Pactola Reservoir.

Land-based dredging operation would occur in the inlet channel to the South Marina in Custer Gulch. The purpose of the project is to remove silt and other soil material from the channel bottom while the water is below normal levels. By removing the ground material to depths of 4 to 20 feet along the channel and widening portions of the channel to 60 to 150 feet, marina services on the reservoir will be available for longer time periods. The estimated 40,000 cubic yards of dredged material would be used to construct a new boat ramp immediately adjacent to the existing Custer Gulch channel. The boat ramp would be built on the old road leading to the town of Pactola. The road which is under water during normal reservoir levels is currently exposed and being used as a boat ramp for small vessels. The fill material would be used to raise the existing old road bed to a grade capable of using the road as a boat ramp once the reservoir level falls 12 feet below normal. This would be the depth at which time the existing South Boat Launch is no longer functional.

In addition to requesting comments on the dredging and creation of a new boat launch facility at Custer Gulch on the south side of the reservoir, comments are also being accepted on the following additional access proposals.

The Pactola District is considering expanding the North Marina Boat Launch Facilities in the following ways:

- (1) widening the existing boat ramp from 40 to 60 feet;
- (2) extending the ramp approximately 300 feet or to a point where boat launching can be accomplished when the reservoir is 40 feet below normal;
- (3) expanding parking facilities;
- (4) and providing additional docks for boat launching.

To allow for additional public safety and reduced user congestion, the North Marina boat slips would be relocated to Boarding House Gulch. Improvements that would be needed include:

- (1) upgrading entrance road;
- (2) land-based dredging the channel to provide boat slip access when reservoir is 40 feet below normal; and
- (3) construction of parking facilities.

The last proposal would be to lengthen the existing South Boat Launch for approximately 200 feet at the current slope of 12 percent. The reservoir bottom would then be dredged to a depth of 40 feet below the normal water level. This would provide a channel to the boat ramp and provide greater user benefit.

All proposals for reservoir access are long-term development projects except for the boat ramp at Custer Gulch and are dependent based on available funding and manpower.

The land dredging at South Marina Custer Gulch is a project being considered for immediate construction.

Please contact me at the Pactola Ranger District Office (343-1567) if further information is needed.

Please comment on the dredging and access proposals on or before November 20, 1989.

A contour map of Pactola Reservoir is enclosed for your convenience.

Sincerely,

PAUL J RUDER District Ranger

Enclosure







from the BLACK HILLS National Forest

RR 2 Box 200, Custer, SD 57730

RANGER DISTRICTS

BEARLODGE

District Ranger Highway 14W Sundance, WY 82729 (307)283-1316

CUSTER

District Ranger 330 Mt. Rushmore Rd. Custer, SD 57730 (605)673-4853

ELK MOUNTAIN

District Ranger 640 South Summit Newcastla, WY 82701 (307)746-2783

HARNEY

District Ranger HCR, Box 51 Hill City, SD 57745 (605)574-2534

NEMO

District Ranger 460 Main Street Deadwood, SD 57732 (605)578-2744

PACTOLA

District Ranger 803 Soo San Drive Rapid City, SD 57701 (605)343-1567

SPEARFISH

District Ranger 2014 N. Main Spearfish, SD 57783 (605)642-4°22

BOXELDER CIVILIAN CONSERVATION CENTER

P.O. Box 110 Nemo, SD 57759 (605)348-3636 or 578-2371



*** = 50. 200, 00.101, 00 01 10.

For Immediate Release

Helease Date: October 19, 1989

Contact: Paul J. Ruder

Phone: (605) 343-1567

PROPOSED LAND-BASED DREDGING OPERATION AND PUBLIC ACCESS
PROPOSALS FOR THE PACTOLA RESERVOIR

Rapid City, SD -- The Pactola Ranger District, Black
Hills National Forest is requesting comments on the proposed
land-based dredging operation and public access proposals for
Pactola Reservoir.

Land-based dredging operation would occur in the inlet channel to the South Marina in Custer Gulch. The purpose of the project is to remove silt and other soil material from the channel bottom while the water is below normal levels. By removing the ground material to depths of 4 to 20 feet along the channel and widening portions of the channel to 60 to 150 feet, marina services on the reservoir will be available for longer time periods. The estimated 40,000 cubic yards of dredged material would be used to construct a new boat ramp immediately adjacent to the existing Custer Gulch channel. The boat ramp would be built on the old road leading to the town of Pactola. The road which is under water during normal reservoir levels is currently exposed and being used as a boat ramp for small vessels. The fill material would be used to raise the existing old road

bed to a grade capable of using the road as a boat ramp once the reservoir level falls 15 feet below normal. This would be the depth at which time the existing South Boat Launch is no longer functional.

In addition to requesting comments on the dredging and creation of a new boat launch facility at Custer Gulch on the south side of the reservoir, comments are also being accepted on the following additional access proposals.

The Pactola District is considering expanding the North
Marina Boat Launch Facilities in the following ways:

- (1) widening the existing boat ramp from 40 to 60 feet;
- (2) extending the ramp approximately 300 feet or to a point where boat launching can be accomplished when the reservoir is 40 feet below normal;
- (3) expanding parking facilities; and
- (4) providing additional docks for boat launching.

To allow for additional public safety and reduced user congestion, the North Marina boat slips would be relocated to Boarding House Gulch. Improvements that would be needed include:

- (1) upgrading entrance road;
- (2) land-based dredging the channel to provide boat slip access when reservoir is 40 feet below normal; and
- (3) construction of parking facilities.

The last proposal would be to lengthen the existing

South Boat Launch for approximately 200 feet at the current slope of 12 percent. The reservoir bottom would then be dredged to a depth of 40 feet below the normal water level.

This would provide a channel to the boat ramp and provide greater user benefit.

All proposals for reservoir access are long-term development projects except for the boat ramp at Custer Gulch and are dependent based on available funding and manpower.

The land dredging at South Marina Custer Gulch is a project being considered for immediate construction.

Contact District Ranger Paul Ruder at the Pactola Ranger District Office (343-1567) if further information is needed.

Please comment on the dredging and access proposals on or before November 20, 1989.



APPENDIX D

Economic Analysis Summary

ECONOMIC & FINANCIAL ANALYSIS

SUMMARY REPORT

PROJECT NAME: DREDGING
PROJECT ID: PACTOLA
LOCATION: RESERVOIR

DATE: 03/02/90 BASE YEAR: 1989 DISCOUNT RATE: 4 %

I. ECONOMIC BENEFIT/COST ANALYSIS

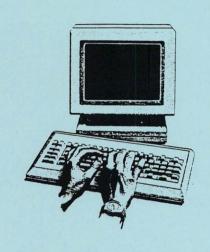
	ALTERNATIVES			80.		
	No Action	001	002	003	004	
PRESENT VALUE BENEFITS (\$)						
Range	0	0	0	0	0	
Recreation	1.28916E+07	4.83839E+07	1.08274E+07	1.35345E+06	2.63502E+06	
Timber	0	0	0	0	0	
Water	0	0	0	0	0	
Wilderness	0	0	0	0	0	
Wildlife & Fish	7.24745E+06	0	0	0	2.21258E+06	
Other	0	0	0	0	0	
Total Economic Benefit	2.0139E+07	4.83839E+07	1.08274E+07	1.35345E+06	4.8476E+06	
PRESENT VALUE COSTS (\$)						
Operation & Maintenance	4077	0	0	66777	131054	
Capital Investment- Roads	0	249899	0	0	129851	
- Other	0	75452	440912	138755	844181	
General Administration	0	157265	407711	0	0	
Cooperative/Non-Budget	0	544485	227811	589069	0	
Total Economic Cost	4077	1.0271E+06	1.07643E+06	794602	1.10509E-06	
ECONOMIC MEASURES (\$)		ar.				
Total						
Benefit/Cost Ratio	4939.54	47.11	10.06	1.7	4.39	
Present Net Value	2.0135E+07	4.73568E+07	9.75096E+06	558844	3.74251E+06	
Incremental						
Benefit/Cost Ratio		27.61	-8.68	-23.76	-13.89	
Present Net Value		2.72219E+07		-1.95761E+07		
Rank by B/C Ratio		1	2	14	3	

001 Custer Gulch

002 North Boat Launch

003 South Boat Launch

004 Boarding House Gulch



APPENDIX E

Respondent's Summary

Respondents' Summary

The letter in Appendix C was sent to 172 current and past slipholders on Pactola Reservoir. Thirty written responses were received which indicated the following priority for boating access improvements on the reservoir:

Priority #1 - Custer Gulch
Priority #2 - North Boat Launch
Priority #3 - South Boat Launch
Priority #4 - Boarding House Gulch

Attached are copies of several responses.

Bangs, McCullen, Butler, Foye & Simmons

Lawyers

George A. Bangs W. A. McCullen (1943-1987) Joseph M. Butler Thomas H. Foye Thomas E. Simmons Ronald E. Clabaugh Charles L. Riter 818 St. Joe Street

Mailing Address P. O. Box 2670

Rapid City, South Dakota 57709

605-343-1040

Telecopier 605-343-1503

Allen C. Nelson James P. Hurley Michael M. Hickey Mark F. Marshall Terry L. Hofer Rebecca A. McMahon Patrick K. Duffy

October 23, 1989

Mr. Paul J. Ruder, District Ranger U.S. Dept. of Agriculture Forest Service Black Hills National Forest Pactola Ranger District 803 Soo San Drive Rapid City, SD 57702

RE: Reference No. 2330

Dear Mr. Ruder:

THF/cp

Many thanks for including me on the mailing list for your letter number 2330 dated October 20, 1989.

Too often in the past I have found it necessary to be critical of forest service policies. This time I am very pleased to be able to write you and say thank you for your suggested plans with respect to the development of Pactola lake. I have been a frequent user of Pactola for over 25 years, and the suggestions that you have made are the most sensible that I have ever seen in that time.

I wish you success in being able to carry out your plans.

Very truly yours, OCT 2 4 1988 Action District Ranger BANGS, MCCULLEN, BUTLER, FOYE & SIMMONS TimberiFire Staff Sale Admin. Prep. Forester TSI Tech. Thomas H. Foye Wildlife R3! SIS! Rec. Forest Forestry Teah PWC VIS Ranco

Atwater Chemical Services
1802 W. Fulton Street Rapid City, So. Dak. 57702

Phone 342-1163

2330

Oct 2

Exterminating, Tree Spraying & Injecting Lawn & Garden Supplies Lawn & Garden Supplies Chemical Lawn Care

Oct 24, 1989

1d-

Dear Paul -

Thank you for your request of my input on proposed work at Pactola Reservoir Having had a pontoon on Pactola for the past 14 years I am interested in any improvements or changes.

& agree with all proposals except one. making boardinghouse bulch into a marine. There is virtually no protected cover on pactola where a boater can find protection from storms, a quiet place to spend the night, or a peaceful place among all the speed boats and waves. To do this to boarding house - my favorite cove is to me a violation to my privacy. There is little congestion for ies people who park on factola. The congestion is caused By the day boaters who pay-0dollars for the care of the facility. Why ruin Boardinghouse to help the folks who don't pay? This is a bad idea. I would like to help in any way or voice my opinion at any hearings.

Kevin a atwater

United States District Court

District of South Bakota

Chambers of
Andrew W. Bogue
Senior Judge

November 3, 1989

NOV _ 6_198

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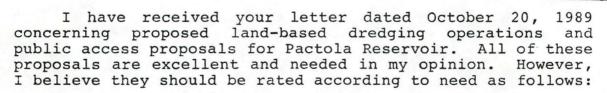
Library

Valorite R&L 91s

244 Federal Building Rapid City, South Dakota 57701

> Mr. Paul J. Ruder District Ranger Pactola Ranger District 803 Soo San Drive Rapid City, SD 57702

Dear Mr. Ruder:



- 1. I believe that all dredging in connection with the South Marina in Custer Gulch should be done first.
- 2. The construction of a new boat ramp to be immediately adjacent to the existing Custer Gulch channel should be then dealt with in conjunction with the dredging referred to above.
- 3. The construction considered relative to the North Marina boat launch facilities should be done as proposed following the improvement to the South Marina area. I have long been concerned about the tremendous conjestion at the North Marina landing. I believe that providing permanent slips in another area, rather than at the boat ramp, would ease the conjestion problem. The widening and extending of the ramp, of course, would be excellent.
- 4. The expansion of the parking facilities is a must eventually because of the irritating practice of some people who leave their boat trailers in the parking spots normally reserved for vehicles over the weekend. In this way, they can save a parking spot for their car immediately in back of their parked trailer.

Thank you for advising me of your plans. I believe that this would have and should have been started earlier because of the low water level. I am sorry that it wasn't.

Sincerely,

Andrew W. Boque

Lohen w Dane



P.O. Box 747, Rapid City, South Dakota 57709-0747 Phone: 605/343-1744 • FAX: 605/343-1916

November 6, 1989

Mr. Paul J. Ruder, District Ranger Black Hills National Forest 803 Soo San Drive Rapid City, SD 57702

Dear Mr. Ruder:

Our committee supports the proposal for a land-based dredging operation in the channel leading to the South Marina at Pactola Reservoir. Hopefully there will never be a better time to accomplish the removal of silt from the channel bottom.

We support the dredging and creation of a new boat launch facility at Custer Gulch on the south side of the reservoir and the expansion project for the North Marina boat launch facilities as outlined in your October 20 letter.

We also support the relocation of the North Marina boat slips to Boarding House Gulch and lengthening the South Boat Launch. All of these projects would enhance recreation at Pactola and would be much easier to accomplish with the lake at its present level than after it fills to a more normal level.

Sincerely,

John Hauer, Chairman

Natural Resources Committee

M1.16

NUV 9 19	98 9 ea	Actio	on
District Ranger	VA	1	-
Timber/Fire Staff	1		
Sale Admin.	1		
Prep. Forester			-
TSI Tech.			
Wildlife		10	
R&L Staff	13	X	1
Rec. Forester		1	*
Forestry Tech.			
PWC	1		
VIS	1		1
Range/Fire			1
Bus. Mgmt.	11		1
Receptionist	1		1
Clerk Typist			1
Resource Clark		or	1
Litrary	1	-	1
Bu. in Powa	1		1
Civic Center			1



Offices Located in Rushmore Plaza Civic Center

4305 Minnekahta Drive Rapid City, SD 57702

November 9, 1989

Pactola Ranger District 803 Soo San Drive Rapid City, SD 57702

ATTENTION: Paul J. Ruder

District Ranger

Re: 2330

Dear Mr. Ruder:

Timbor/Fire Stalf Sale Admin. Prop. Fotos ar TSI Tech R&L Staff Red, Forester Forestry Tech. PWC VIS Resource Library Bulletin File

10V 1 3 188 District Ranger

2330

Thank you for soliciting my comments regarding the proposed dredging operation as well as additional access routes for use of Pactola Reservoir.

I am very much in favor of the proposed dredging operation which would deepen and widen the inlet channel to the south marina with the removed materials being used to construct a new boat ramp for use after the reservoir level falls 15 feet below The proposal appears to have been well considered and normal. appears to be a feasible and economic manner in which to increase the continued use of the reservoir for recreational purposes during periods of lower water levels such as are now being experienced. I commend you, the Forest Service and all others who have been instrumental in formulating the proposal and wish you great success in completing the operation as soon as reasonably possible.

In regard to the remainder of the proposals which pertain primarily to access, in my opinion, each of the proposals would enhance the use of the reservoir, as well as the convenience and safety of users. Since I have generally leased a boat slip during the years I have used the reservoir, I have experienced only minor difficulty in launching and removing the boats I have owned, but I have noticed the considerable difficulty experienced by others both in launching and removing boats and in parking, particularly during periods of congested usage. Based upon my family's use of this beautiful reservoir over the past years, and our desire to continue to use it in the same manner in the future, my family and I will remain strong supporters of each of the proposals suggested in your letter.

Sincerely,

Richard O. Sharpe

ROS:skl



BLACK HILLS REGIONAL EYE INSTITUTE

2800 THIRD STREET TOLL FREE

RAPID CITY, SOUTH DAKOTA 57701

1-800-658-3500

NOE AUTHIER, M.D. Eye Physician Evaluation and Tre

DANIEL J. HAFNER, M.D. Eye Physician and Surgeon

JOHN J. HERLIHY, M.D. Eye Physician and Surgeon Retina Macula and Vitreous

TIMOTHY P. MINTON, M.D. Eye Physician and Surgeon Neuro-Ophthalmology **Oculoplastics** Orbital Diseas

ROBERT B. NOXON, M.D. Eye Physician and Surgeon Glaucoma, Pediatric Ophthalmology and Strabismus

E. STERLING PALMERTON, M.D. Eye Physician Evaluation and Consultation

PAUL L. WRIGHT, M.D. Anterior Segment Ophthalmic Surgery and Consultation Medical Director

SCOTT L. BLONDER, M.D. Anesthesiology

November 14, 1989

Paul Ruder District Ranger Pactola Ranger District 803 Soo San Drive Rapid City, SD 57702

Dear Mr. Ruder,

I wanted to take the opportunity to respond to your letter dated October 20, 1989, regarding the proposed improvements to the Pactola district. FMy family and I have been utilizing Pactola Lake for a few years now for recreational purposes and have witnessed a severe curtailment of activity in the area due to the draw-down on the lake itself. Although there are no actual means established to measure the economic toll that the condition of the lake presents right now, I am sure it is significant. It has also seemed to us and fellow boaters that now is the ideal time to embark on some significant improvements, primarily by dredging, for the lake to ensure more and better usage for the area when recovery is at hand.

I highly endorse all of the outlined activities in your letter and urge those in a decision making capacity to proceed with the greatest haste in making these much needed improvements.

Thanks for the opportunity to comment.

Amagas Richard B. Hanafin

RBH: 1e

NOV 1 5 198 Read Action District Canger Salo Auto TO! To. W..... RAL DIL Rec. Forautor Fordum 13. 7. PVIO VIS Rance Fire Bus, hegget. Places a confest Clarie 197101 Resource Clark

November 21, 1989

Mr.Paul J. Ruder District Ranger, Pactola District Black Hills National Forest 800 Soo San Drive Rapid City, South Dakota 57702

Dear Mr. Ruder

Somehow I missed the mailing of the information on the Forest Service proposals involving Pactola Lake. I understand that the time for public comment is also up. However, I still felt compelled to write and compliment you on addressing the situation in such a forthright manner.

Olation Ranger
Timber/Fire Staff
Sale Admin.
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For the most part I am in total agreement and would hope that the work on the south side can proceed immediately to maximize the working conditions and dredging depth that can be reached due to the low water conditions.

My personal opinion is that new boat ramps, structures, and other major capital improvements could be put on hold until funding is available. All work dependent on low water conditions should be done soonest.

As you know Paul, I spend a major portion of my time at and around Pactola. I know that I have as good "feel" for the area as anyone. I enjoyed working with the Forest Service on your old Pactola\Sheridan Surface Users Committee. If at any time you feel that my experience or opinion would be helpful please don,t hesitate to call.

It was also mentioned to me that you have received very little if any public input on the proposals. From all of the grumbling that went on up there the last couple of years(from other than Fercevich!) I am surprised. The proposals are a good start on enhancing the recreational uses of the lake and making them more compatible with irrigation and domestic uses.

Thanks for letting me have a say at this late date. I will look forward to hearing from you.

Sincerey,

Jeff W. Davis



APPENDIX F

Engineer's Estimated Costs

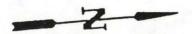
Engineer's Estimated Cost and Drawings

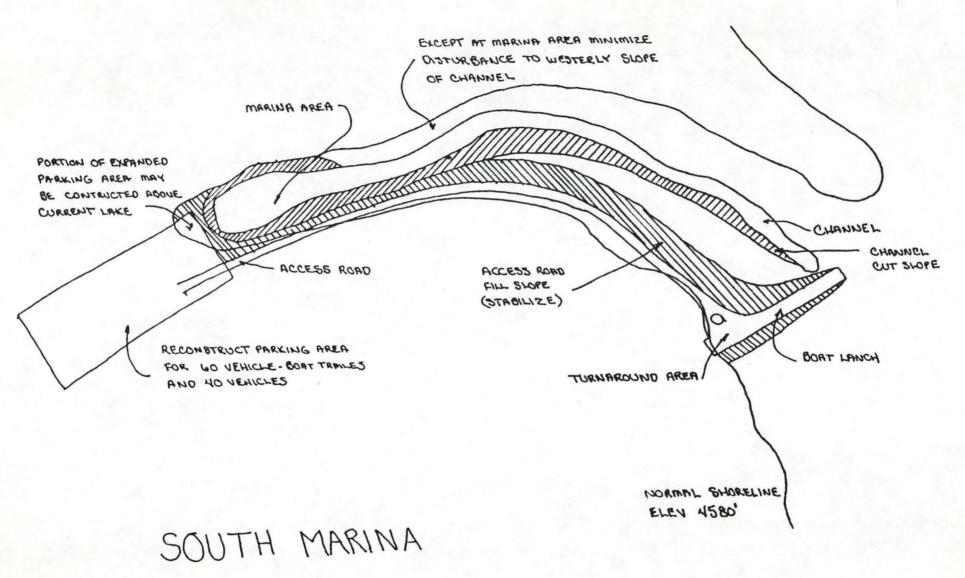
SOUTH MARINA/CUSTER GULCH

Dredge material to create a channel at the 4540 elevation. This channel would be 50-feet wide to the marina area where it would be expanded to 100 feet in width. Material developed through this dredging would be utilized to construct a double lane roadway from the South Marina parking area to a new boat launch extending to the 4540 elevation. This boat launch would be 40-feet wide from a turnaround at the end of the roadway. The roadway and boat launch would be under water at normal lake levels. The existing parking area would be reconstructed to provide parking for 60 vehicle-trailers and an additional 40 vehicles.

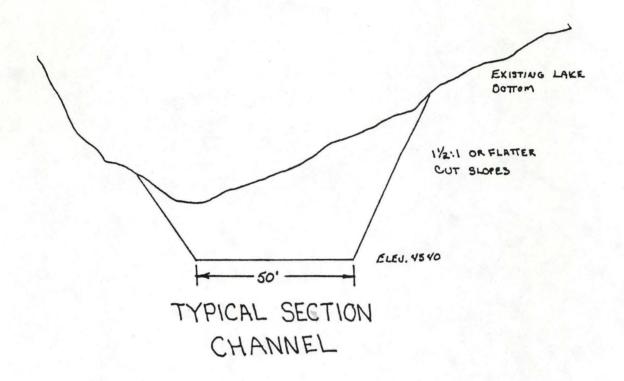
Dredging channel and roadway construction	\$150,000
Stabilized roadway surface (aggregate)	30,000
Boat ramp	75,000
Parking reconstruction	80,000
Erosion control, riprap, energy dissipators	5,000
Other stabilization and signing	10,000
Engineering and Administration	30,000

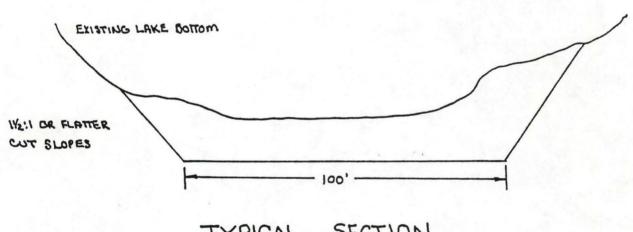
Total \$380,000





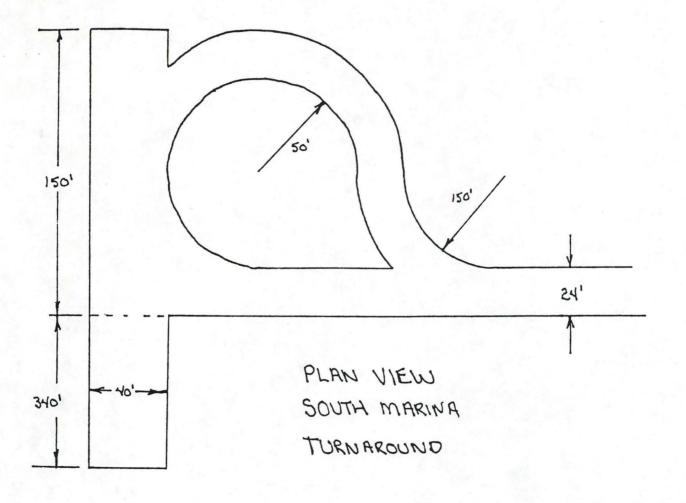
NO SCALE

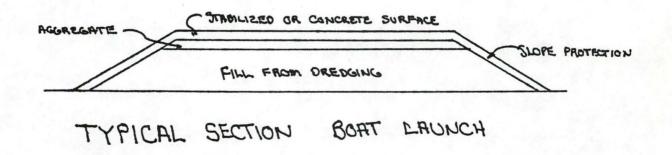




TYPICAL SECTION

MARINA EXPANSION



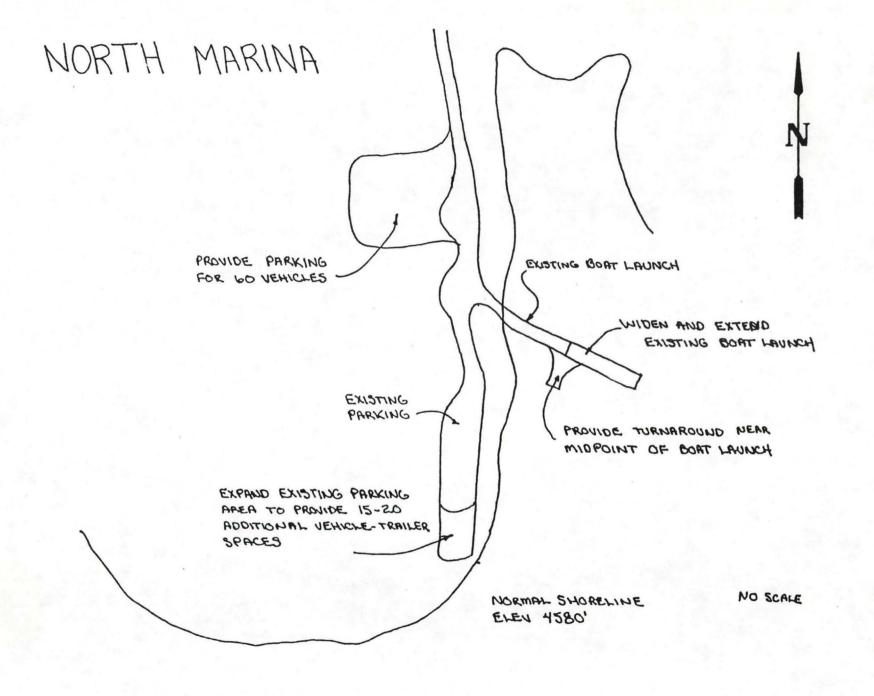


NORTH MARINA/NORTH BOAT LAUNCH

Reconstruct the existing boat launch providing a 40-foot width to the 4540 level and improve the alignment of the existing approach to the boat launch. This would consist of reconstruction of the entire existing facility and extension of approximately 300 feet. A turnaround would be provided near the midpoint of the boat launch. This would reduce congestion during periods of high use in low water conditions. If adequate material is not available to construct the boat launch subgrade, additional material would be borrowed by recontouring the lake bed adjacent to the boat launch. The existing boat trailer parking area would be enlarged to provide 15-20 additional parking spaces and a passenger vehicle parking area would be developed above and opposite the North Marina store to provide safe parking for 60 vehicles.

Boat launch grading	\$ 35,000
Boat launch gravel cushion	15,000
Boat launch concrete	80,000
Boat trailer parking grading	30,000
Boat trailer aggregate base	10,000
Boat trailer asphalt surfacing	30,000
Vehicle parking grading	40,000
Vehicle parking aggregate base	20,000
Vehicle parking asphalt surfacing	60,000
Erosion control, stabilization and signing	15,000
Engineering and Administration	30,000

Total \$360,000

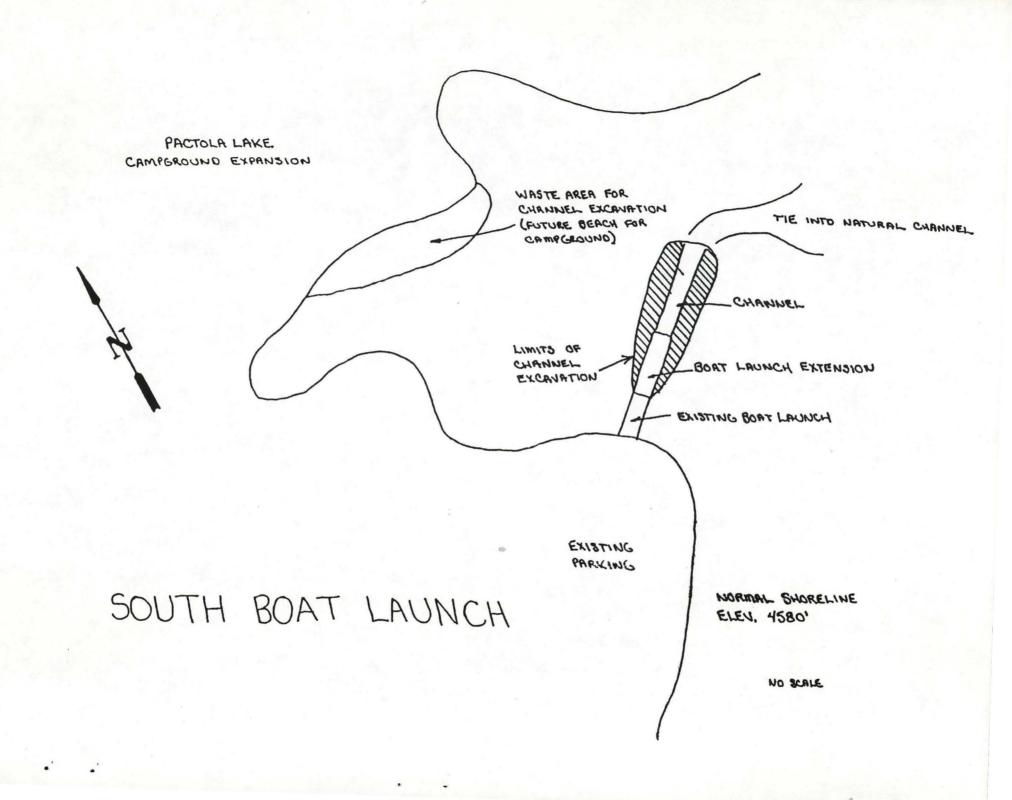


SOUTH BOAT LAUNCH

Excavation of a channel from the existing boat launch extending to the 4540 level. The existing boat launch would be extended to this level. The material developed during excavation would be utilized to create a beach area adjacent to proposed expansion of the campground areas of Pactola Lake.

Total \$275,000

Excavation of channel	\$150,000
Extension of boat launch	50,000
Erosion control and stabilization	10,000
Sand for beach	50,000
Engineering and Administration	15,000



BOARDING HOUSE GULCH

Reconstruct existing road from the junction with South Dakota 385 to provide a stable surface and passing capabilities for two-way traffic; provide a parking area for 50 vehicles and 20 boat trailers and remove material from the channel to provide a boat ramp to the 4540 level. This material developed in creating the channel would be utilized for construction of the parking areas.

Total \$420,000

Boat ramp	\$ 75,000
Reconstruction of the access road	40,000
Aggregate surfacing for access road	30,000
Channel excavation	200,000
Construction of parking areas	20,000
Aggregate surfacing for parking areas	20,000
Erosion control and stabilization	10,000
Engineering and Administration	25,000

RECONSTRUCT ACCESS ROAD DOUBLE - LANE AGGREGATE SURFACE TO SO 385. BOARDINGHOUSE PARKING AREA FOR SO VEHICLES. -UTILIZE MATERIAL FROM DREDGING. GULCH AGGREGATE SURFACE PORTION OF PARKING AREA 13 EXPECTED TO BE CONSTRUCTED ABOVE NORMAL LAKE LEVEL MARINA AREA CTIMIL NOTAVADXE CHANNEL NORMAL SHORELINE ELEV. 4580' NO SCALE

